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The impacts of teacher's efficacy and motivation on student's academic achievement in science education among secondary and high school students

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Abstract

© 2018 by the authors. In the 21st century, we observe an increasingly aware of a series of global, technological and scientific advancement that create a need of good performance in science education at all levels of schooling. These challenges, among them rapid science and technological changes, a rise of information technology use, and continuing movement towards a knowledge-based society all highlight the need for deep education in science including biology, chemistry, environmental science, physics, and sustainability. In fact, the impact of teacher characteristics of self-efficacy level is important for science education and students' learning outcomes in science. In an effort to highlight this, this study investigated the impacts of teacher efficacy and motivation on students' academic achievement in science education in secondary and high schools located in Iran and Russia using motivation for academic performance scale (α = 0.89) and teacher self-efficacy scale (α = 0.91) as measuring instruments and achievement test in science education. Two hypotheses were tested using the statistical programme. For evaluating the demographical differences of the students in terms of their academic achievement, comparative analyses were performed using t-test. Results showed that gender difference was not significant but nationality difference was significant in terms of students' academic achievement in science education. Also other findings reported significant impact of teacher self-efficacy and motivation on academic achievement in science education. Implications, suggestions and recommendations for students, teachers, school administrators, parents, government, education counselors, etc. were discussed and presented.

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Keywords

Academic achievement, Learning motivation, Learning outcome, Science education, Teacher self-efficacy

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